PB-213 041

RESEARCH SUPPLEMENT TO JOURNAL - WATER POLLUTION CONTROL FEDERATION

Water Pollution Control Federation

Prepared for:

Environmental Protection Agency
Federal Water Quality Administration

June 1971

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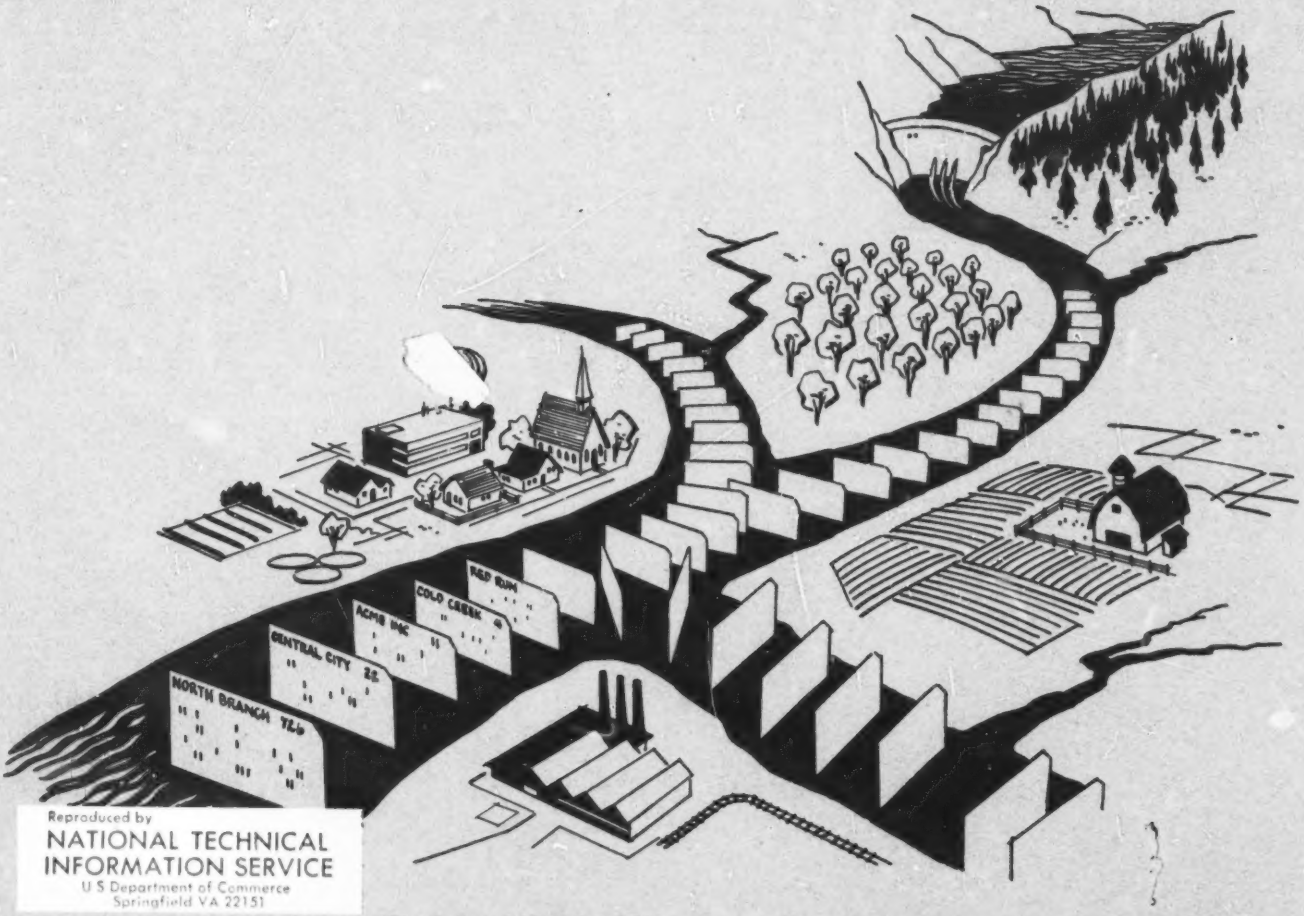

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The Water Pollution Control Research Series describes the results and progress in the control and abatement of pollution in our Nation's waters. They provide a central source of information on the research, development, and demonstration activities in the Environmental Protection Agency, through inhouse research and grants and contracts with Federal, State, and local agencies, research institutions, and industrial organizations.

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SELECTED WATER RESOURCES ABSTRACTS
INPUT TRANSACTION FORM

1. Report No.
2.
3. Accession No. W 73-01635 ~~01665~~

4. Title (all caps) Research Supplement to Journal Water Pollution Control Federation,

5. Report Date
6.
8. Performing Organization Report No.
10. Project No. EPA Program 16090 DQZ 06/71.
11. Contract/Grant No.
13. Type of Report and Period Covered

7. Author(s)

9. Organization
Water Pollution Control Federation, Washington DC

~~12. Sponsoring Organization~~

15. Supplementary Notes Environmental Protection Agency, Water Pollution Control Research Series, June 1971, 32 p, 6 tab, 12 ref, 4 append.

EP1.16: 16090 DQZ 06/71

16. Abstract

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~~17a. Descriptors~~ ~~* Research and development, * Publications, Water pollution, Water quality, Water resources~~

17a) Descriptors:

~~Identifiers~~ * Research and Development, * Waste Water (Pollution), *Waste Water Treatment, *Waste Water Disposal, *Publications, Water Pollution, Water Pollution Control, Water Pollution Effects, Water Pollution Sources, Water Pollution Treatment, Water Quality, Water Resources

17c. COWRR Field & Group 05G, 10A, 05D ~~01 B, 03 D-E, 05 A-C, 06 A, 06 D, 07 A-C, 10 A~~

Copy available from GPO Sup Doc as , $0.45 ; microfiche from NTIS as PB 213 041, $0.95.

18. Availability Copy available from GPO Sup Doc as , $; microfiche from NTIS as PB , $0.95

19. Security Class. (Report)
20. Security Class. (Page)
21. No. of Pages
22. Price

Send To:
WATER RESOURCES SCIENTIFIC INFORMATION CENTER
U.S. DEPARTMENT OF THE INTERIOR
WASHINGTON, D. C. 20240

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WRSIC 102 (REV. JUNE 1971)
GPO 913.281

RESEARCH SUPPLEMENT TO

JOURNAL

WATER POLLUTION CONTROL FEDERATION

by

Water Pollution Control Federation
3900 Wisconsin Avenue
Washington, D.C. 20016

for the

ENVIRONMENTAL PROTECTION AGENCY

Project # 16090 DQZ

June 1971

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 - Price 45 cents

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ABSTRACT

Publication of a quarterly research supplement to Journal Water Pollution Control Federation with federal grant support was carried out from October 1967 to August 1970. This was an experimental effort to determine the feasibility of such a publication in developing its own self-sustaining support as an effective and economical means of disseminating research information to the water pollution control field. The 12 issues published in the three-year grant period proved to be an effective means of such dissemination and demonstrated an excellent method of creating a permanent, retrievable source of pertinent information. The project was not successful economically in that advertising and other revenues did not reach anticipated goals. In the absence of self-sustaining income and the availability of continued federal support, the project was terminated in August 1970 at the end of the grant period. Each of the twelve (12) issues published contains eight to ten authored research papers on a variety of subjects and each is abstracted in English, French, German, Portuguese, and Spanish. All papers are indexed in the annual index of the Journal.

This report was submitted in fulfillment of Project Number 16090 DQZ under the partial sponsorship of the Environmental Protection Agency.

CONTENTS

Section		Page
I	Conclusions	1
II	Recommendations	3
III	Introduction	5
	Specific Aims	5
IV	Methods of Procedure	9
V	Operational Phase	11
VI	Discussion	13
	Advertising	13
	Acceptance and Interest	15
	Value as a Permanent Reference	20
	Self Support	22
	Budget	24
VII	Acknowledgments	27
VIII	List of Publications	29
IX	Appendix	31

TABLES

No.		Page
1	Publication of Research Material in Journal Water Pollution Control Federation	6
2	Advertising in Research Supplement to Journal Water Pollution Control Federation	14
3	Numerical Tabulation of 1,989 Questionnaire Replies on Reader Survey, Journal Water Pollution Control Federation, Research Supplement	16
4	Summary of Journal Water Pollution Control Federation Circulation as of December 31, 1969	18
5	Selected Respondent Job Categories and Their Replies to Question No. 8	21
6	Project Budget Summary	25

SECTION I

CONCLUSIONS

1. The publication of a quarterly research supplement to Journal Water Pollution Control Federation from October 1967 to August 1970 proved to be an effective way to disseminate current research information to the water pollution control field.

2. The supplement, through use of information retrieval and indexing procedures already followed by Federation publications, provided an effective and permanent documented reference for the material published.

3. The project demonstrated a logical and cooperative way for the federal government and the primary professional society serving the water pollution control field to serve the interests of the field.

4. The supplement did not generate self-sustaining support to the degree anticipated for the project.

5. Exploration of various sources of income to sustain the supplement -- advertising, increased membership dues, page charges, reprint sales, separate subscriptions -- was made and none was found to be adequate and/or feasible.

6. Publication of serially numbered federal research reports is not viewed as gaining the distribution and information retrieval benefits inherent with publishing a supplement to a recognized, widely circulated, existing periodical.

SECTION II

RECOMMENDATIONS

This project has demonstrated a cooperative means by which the federal government and a private organization can serve a technical field. It provides an example of effective dissemination of research material and the creation of a permanent, retrievable reference source. It is recommended that this consideration be carefully made in future related endeavors and in the setting of policy relative to the best means of transferring technology resulting from federally funded research efforts.

The studies made in connection with the project and concerning the development of supporting funds appear to show clearly that in today's economy such support is not available in sufficient amounts to fund a publication of the type published. A willingness and available funds to provide continued support for this type publication is recommended.

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SECTION III

INTRODUCTION

Beginning in the years immediately preceding 1966 a sharp increase was evident in the amount of research work conducted and reported in the water pollution control field. A primary reason for this was the expanding research and development support available from the U.S. Public Health Service, Division of Water Supply and Pollution Control; the Federal Water Pollution Control Administration; and subsequently the Federal Water Quality Administration, and the Water Quality Office of the Environmental Protection Agency.

The Water Pollution Control Federation, a non-profit, professional, technical society serving this field has been keenly aware of this trend and the necessity to serve as an important disseminating agency for the results of this research work. The principal means of doing this has been through the publication of its Journal Water Pollution Control Federation. The Journal was reaching some 15,000 people monthly in the water pollution control field at the beginning in 1967 of the research project reported here and was reaching over 20,000 people monthly at the termination of the three-year project period in August 1970. This circulation constitutes the largest audience in the field served by any periodical publication.

The Journal also serves the broadest cross section of interest in the field and traditionally has brought the results of research work to other researchers and all segments of the field which can be stimulated by this research toward its practical application.

Because of the expanding and continuing increase in research needs and work produced, the amount of attention and space devoted to research in the Journal prior to 1967 was inadequate to meet the demand despite a solid trend (Table 1) of more pages devoted annually to research. A search for other means of providing increased publication capacity for research work was sought. An examination of the alternate means of accomplishing this objective resulted in the selection of a periodical research supplement to the Journal. By this means the results of critical research efforts could be made available on a more current basis to the maximum number of individuals and organizations in the water pollution control field.

Specific Aims

The Journal Water Pollution Control Federation has recognized the research needs since its inception in 1928 and has devoted the maximum possible effort to publication of selected research work since that time. With its 1970 paid circulation of more than 20,000 and the broad spectrum of readers represented, the Journal has a continuing obligation to present the most representative of the research effort.

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Table 1. - Publication of Research Material
in Journal Water Pollution Control Federation

Year	Total Technical Editorial Pages	Total Research Pages	% Research
1960	1,267	470	37
1961	1,170	481	41
1962	1,196	637	53
1963	1,406	755	54
1964	1,478	701	48
1965	1,647	1,038	63
1966	1,585	832	53
1967 (1)	1,794	1,069	60
1968 (2)	2,204	1,261	58
1969 (2)	2,304	1,304	57
1970 (3)	2,475	1,137	46

(1) One (1) research supplement published.
(2) Quarterly research supplements published.
(3) Three (3) research supplements published.

Source: Data prepared for the Association of Industrial Advertisers.

Table 1 shows the trend of research material in the Journal since 1960. For the five years prior to 1960 the research effort as indicated by the supply of research material was relatively steady at 500 to 550 pages per year and about 40 percent of total editorial space. When the federal research grants program began to take effect, though, the amount of research work available for publication rose sharply.

In 1960 it was recognized that there was a need to expand the research portion of the Journal. During the intervening period the number of pages has more than doubled and its share of the total was increased by 25 percent. Despite these deliberate efforts it was felt that more space needed to be assigned to research papers. Research has increased faster than the capacity of the Journal has been able to maintain. Because of this and because of anticipated increases, it appeared that a way must be found to meet this challenge. It further appeared that the most practical way to do this was by the initiation of a research supplement to the Journal beginning in 1967. In the initial planning this was visualized to be a quarterly supplement and it further was expected that there would be approximately 500 to 600 pages of research material published in these supplements during a year.

Strong evidence of the availability of research material was shown by the fact that since 1960 the Journal had had an increasing backlog of research papers. One of the Federation's principal objectives is for the Journal to continue as the leading forum for the publication of research material for the water pollution control field. It was a conservative estimate of the backlog of high-quality research material that led to the projection of 500 to 600 pages per year as a realistically sized research supplement.

The specific aims of the project included the fact that there is high quality research material available for publication which needs to be offered but could not be under existing organization limitations. As a result, inordinate delays occur and these delays compound themselves because of the expanding research activity. By offering a research supplement it was considered possible to expand the availability of research workers' results to the entire circulation of the Journal. By this means it would better serve those working on related and other projects and expand the availability of research results to the largest group of individuals and organizations who can utilize the results toward the practical job of water pollution control.

The long-term objective was to make the increased effort self-supporting. The first year of the three-year project period was a trial to assess (a) potential for advertising support for or due to the added publication, (b) the acceptance and relative degree of interest for individuals and organizations, and (c) the value of a research supplement as a permanent reference. For these reasons the necessary degree of financial grant support was set at 90 percent, 60 percent, and 25 percent, respectively.

Sources of self support were investigated from among areas of or a combination of (a) increased dues to members; (b) increased subscription

prices; (c) special assessment from individuals, organizations, or enterprises particularly interested in research; (d) advertising revenue; (e) revenue from reprints; and (f) page charges to authors.

The publication of the research supplement in no way affected the format or content of the Journal itself. The Journal continued to offer a balance of material of interest to the entire water pollution field and included expanding coverage of research. There was a selective placement of research papers in the research supplement based on type of research project, depth of study, subject matter, etc. All 12 quarterly issues contained unrelated studies about different processes or fundamentals with a deliberate attempt to present a wide range of subjects. These selections determined the makeup of the Journal and the research supplement. Material in the supplement, however, was confined solely to those papers which were unmistakably research reports.

SECTION IV

METHODS OF PROCEDURE

The selection of material, preparation for publication, publishing, and distribution were accomplished in the same manner employed for the production of the Journal.

Some 35 to 50 percent of the papers received for Journal consideration may be classified as research reports. Three principal sources constitute this supply of material: direct submissions, papers from the Federation's Annual Conference, and papers from the meetings of the organization's 58 affiliated Member Associations in the U.S. and abroad.

All papers are technically and critically reviewed by competent professionals in the field either on the Federation's full-time staff or by selected professionals considered particularly expert in a given subject area.

Papers selected for and published in the research supplement were confined to those reporting on basic, applied, and developmental research work. No consideration was made as to whether or not research work reported in a selected paper was supported by federal grant funds, but a conservative estimate is that 60 to 75 percent of the published work received at least partial federal support.

The publication procedures for the supplement followed those already employed for the Journal. Many reprints of papers were distributed by author purchase, on direct inquiries about a specific subject, and through Federation displays at a variety of technical meetings in the U.S. and abroad.

All published material was copyrighted as a part of the Journal and is subject to the controls of the copyright laws. As a Federation publication, the research supplement conformed to the standards outlined for the Journal by the Federation's Publications Committee and the governing Board of Control.

The 12 issues of the research supplement were published as Part 2 of and mailed with the Journal in October 1967; February, May, August, and November of 1968 and 1969; and February, May, and August of 1970. This was done to (a) use the Journal copyright, (b) provide for informational retrieval and permanent reference indexes with the Journal, and (c) take advantage of the Journal's second class mailing permit. Each supplement consisted of a 160-page number divided roughly into 32 pages in the advertising section and 128 pages of technical editorial material.

Advertising promotions were made regularly. Contents other than authored papers consisted of English abstracts and keywords designed to be compatible with the Engineers' Joint Council information retrieval system;

abstracts in French, German, Portuguese, and Spanish for the use of readers abroad; research news and notes; and occasional editorial comment by the Editor.

The supplement was mailed in the same envelope with the Journal and addressed to all Federation members and subscribers.

SECTION V

OPERATIONAL PHASE

Comments concerning the operational phase of this grant-funded project largely are given in Section IV, Methods of Procedure.

The publication of a supplement to an existing, recognized periodical can be accomplished easily using regular operating procedures supplemented only by the additional staff required to accomplish the added work in conformity with the established production schedule.

In terms of the Federation's staff organization, it was estimated that two professional assistant editors and two supporting editorial assistants would be required to complement the staff on hand at the beginning of the project. Only one-half of the additional staff was employed full time and use was made of part-time editorial assistance from a former editorial staff member.

SECTION VI

DISCUSSION

Discussion and analysis of the research project are divided into the areas cited in Section I, Introduction, Specific Aims: (a) potential for advertising support, (b) acceptance and degree of interest of individuals and organizations, (c) value of the research supplement as a permanent reference, and (d) investigation of self-support of the publication.

The comments offered are based on experiences in the conduct of the project, an assessment of the three-year project at its mid-point, and a survey of the Federation's members and subscribers after 10 of the 12 issues of the supplement had been published.

Advertising

The application for a research grant to fund partially the publication of a quarterly research supplement to Journal Water Pollution Control Federation was based on decreasing federal support over a three-year period with the goal of increasing self-support funded to a significant extent by advertising revenues from display advertisements by equipment and process manufacturers and professional cards taken by consulting engineering firms and laboratories.

It was assumed that no advertising income would be realized in the first year during which a detailed assessment would be made of the potential. It was found that to assess this source of income it was necessary to launch immediately a promotional effort to (a) inform the field and potential advertisers of the publication of the supplement and its possibilities as an advertising medium, and (b) to promote the purchase of advertising space in the supplement.

The estimated advertising income for the three-year grant period was $28,500, divided into $9,500 for the second year and $19,000 for the third year. Based on 12 issues of the supplement, the average income per issue was budgeted at $2,375 per issue. Actual experience for the 12 issues resulted in an average income per issue of about $1,680. Table 2 shows details of the advertising placement and income for the life of the project.

Small response was obtained from manufacturers and suppliers who were promoted for the placement of display advertisements ranging from one-quarter to full-page presentations. The response from consulting engineers and laboratories was much better and considered to be as well as might be reasonably expected; these "cards" are one-twelfth page in size. Table 2 indicates that income from professional cards was slightly higher than that from display advertising.

Efforts were made to determine the failure on the part of advertisers considered prime prospects to place advertisements in the supplement. Responses were not totally definitive, but reasons cited included (a)

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Table 2. - Advertising in Research Supplement to Journal Water Pollution Control Federation

Year and Issue	Paid Pages	Display Ad Income, Gross	Professional Card Ad Income, Net	Total Gross	Total Net Income *
1967					
October	16.0	$2,845.00	$ 649.00	$ 3,494.00	$ 3,067.25
1968					
February	6.0	345.00	717.00	1,062.00	1,010.25
May	7.0	620.00	728.20	1,348.20	1,255.20
August	8.0	975.00	739.40	1,714.40	1,568.15
November	9.0	1,185.00	739.40	1,924.40	1,746.65
1969					
February	9.0	1,035.00	817.60	1,852.60	1,697.35
May	7.0	400.00	817.60	1,217.60	1,157.60
August	10.0	1,265.00	862.00	2,127.00	1,937.25
November	9.0	690.00	907.00	1,597.00	1,493.50
1970					
February	11.5	690.00	1,266.00	1,956.00	1,852.50
May	11.5	690.00	1,388.80	2,078.80	1,975.30
August	10.5	-0-	1,411.20	1,411.20	1,411.20
TOTALS	114.5	$10,740.00	$11,04[illegible]0	$21,783.20	$20,172.20

*Total Net Income reflects 15 percent commission paid to advertising agencies handling the placement of display advertisements; professional cards do not earn agency commissions.

the general economic situation prevailing during 1967-70 and its impact on advertising budgets, (b) the tendency for advertising agencies to not recognize the supplement as a viable medium, and (c) a strong feeling on the part of the advertisers and their agencies that advertisements placed in the supplement going to an addressee in the same envelope as a Journal also carrying one of their advertisements was not economically attractive.

Acceptance and Interest

In attempting to evaluate the acceptance and degree of interest of individuals and organizations in the research supplement as a medium for the prompt dissemination of research studies and results two primary factors were viewed: the potential circulation of a research publication to those directly interested and a questionnaire survey of the Federation's members and subscribers.

The first is related to the matter of exploring sources of financial support for the supplement and is discussed in a subsequent sub-section of this Discussion commentary. In relation to the matter of acceptance and interest, a staff review of the water pollution control research community using Federation membership data, knowledge of the field, estimates of publicly and privately employed researchers, and data on graduate training programs in U.S. universities as documented by the American Association of Professors in Sanitary Engineering, an estimated 2,000 individuals is considered reasonable for individuals so interested that they could be expected to subscribe to such a publication despite what would be a relatively high unit cost. This contrasts with the circulation during the life of this project when about 20,000 copies of the supplement were being distributed monthly at its termination in August 1970.

In April 1970 following publication of 10 of the 12 research supplement issues to be partially supported by the federal grant, a questionnaire survey of the Federation membership was made using a tear-out, business reply form (see Section IX, Appendix) in the organization's monthly newsletter.

Table 3 presents a numerical tabulation of the replies; not all respondents answered all questions. It is difficult to assess the degree to which the replies represent a valid cross section of Federation membership; the comparison of percentages of various job categories to total replies vs. the percentages of these job categories to Journal circulation (as of December 31, 1969) offer the only insight. Table 4 shows the complete breakdown of Journal circulation as of December 31, 1969.

Comments are presented below item-by-item following the order of the questionnaire form and of Table 3.

1. The tabulated responses to question No. 1 do not exactly follow the job categories and their percentage of Journal circulation as shown in Table 3 but come quite close in a number of the categories. Education/research people responded in a substantially greater proportion than they account for in total membership.

Table 3 - Numerical Tabulation of 1,989 Questionnaire Replies on Reader Survey, Journal Water Pollution Control Federation Research Supplement (Item numbers correspond to survey form, see Appendix)

1. JOB FUNCTION

Category	Replies	% of Total Replies vs. % of WPCF 1969 Journal Circulation*	
Consulting Engr.	492	25	26
Fed., State, Local Engr./Chem.	570	29	6
Pub. Health Engr.	47	2	6
Pub. Official	2	-	-
Equipment Mfgr. Personnel	149	7	11
Ind. Waste Engr./Chem.	199	10	5
Ed./Res. Personnel	241	12	4
Coll. Sys./Trt. Plt.	315	16	16
Other	142	7	-

2. YEARS OF WPCF MEMBERSHIP

	Less than 2	2-5	5-10	Over 10
	337	456	454	659
% of Replies	17	23	23	33

3. GOAL OF PUBLISHING RESEARCH

	Yes	No
	1,822	77
% of Replies	92	4

4. SUPPLEMENT FULFILLS GOAL

	Very Significantly	To a Degree	No at All
	470	958	17
% of Replies	24	48	0.9

5. SUPPLEMENT PAPERS READ (per issue)

	None	1-2	3-5	6-8	All
	87	599	739	41	203
% of Replies	4	30	37	2	10

6. SUPPLEMENT USED AS A REFERENCE

	Yes	No
	1,355	391
% of Replies	68	20

Continuation of Table 3

7. PUBLISH RESEARCH MATERIAL

	More	Less	About the Same
	597	109	1,017
% of Replies	30	5	51

8. BEST MEANS OF PUBLICATION

	Quarterly Suppl.	Added Jour. Pgs.	Separate Publ.	Other
	846	586	320	18
% of Replies	43	29	16	0.9

9. SUBSCRIBE TO SEPARATE PUBLICATION

	Yes	No
	862	972
% of Replies	43	49

*See Table 4 for overall breakdown of 1969 Journal circulation.

NOTE: 1,989 replies were received by the published cutoff date of May 18, 1970.
Not all respondents replied to all questions.
% of replies cited are based on total returns of 1,989.

Table 4 - Summary of Journal Water Pollution Control Federation Circulation as of December 31, 1969.

Job Function	Circulation
Cons. Engr.	4,889
Federal, State, Local Engr./Chem.	1,074
Pub. Health Engr.	1,163
Pub. Official	1,438
Ed./Res. Personnel	784
Ind. Waste Engr./Chem.	878
Wastewater Coll./Trt. Oper., Super., Chem.	3,134
Libraries	1,091
Military Agency or Personnel	148
Manufacturers	2,064
Students	542
Awaiting Classification	1,823
TOTAL	19,323

2. Distribution of the respondents' years of Federation membership was surprisingly even in the categories used. It would seem that those responding are predominately solid, continuing, and interested Federation members.

3. This question was designed intentionally to provide an overwhelming "yes" answer so that respondents would be led to answering the subsequent questions.

4. Less than 1 percent of the respondents believe that the research supplement has failed in meeting the goal of publishing and disseminating appropriate research material, while 24 percent feel that it has succeeded very significantly. There is a large middle ground in the responses in the replies to this question. Of 1,445 answers to the question over 98 percent indicated that the supplement has been successful in meeting the goal cited in question No. 3.

5. The largest group of respondents read about one-half of the material presented in the supplement; this is a high percentage as contrasted to most technical publications. This suggests a substantial value attached to research reports by Journal readers. Most supplement issues contained 8 to 10 papers.

6. Question No. 6 reflects what is perhaps the traditional and continuing value of the Journal, that of a documented reference. Certainly, the Journal and the research supplement are different in character and lasting value from more commercially oriented publications in this regard, and the replies to this question seem to bear this out. This, too, may be construed to point out the desirability and necessity of the Federation to provide this type service to the field.

7. The replies indicate that a proper balance was achieved in the amount of research material published vs. other types. However, almost 40 percent of the respondents represented consultants and education/research personnel who may well have a greater professional as well as a greater vested interest in published research than do other categories of Federation membership. This could account for the rather low percentage that suggests less research be published, and may disproportionally color the view of this particular question.

8. The percentage of respondents saying the supplement or added Journal pages is the best means of meeting the goal of research publishing is actually closer than is shown numerically. In retrospect, perhaps the question should have been phrased differently or should not have included the option of marking the supplement item. The 43 percent favoring continuation of the supplement in its present form is discountable to some degree since human nature would lead some to this answer merely because that was the method being used. Most importantly, 1,432 respondents, or 72 percent, have said publish appropriate research material in either the supplement or an expanded regular Journal. The very low interest in a

separate research publication bears out earlier staff assessments of this method as discussed earlier in this sub-section.

9. The closing comment in the preceding paragraph is applicable here, too. Those responding "yes" noted many qualifications, most pertaining to cost. A circulation of 2,000 for a separate publication is a generous estimate, and costs to support such an effort may tend to make this figure even more liberal. This alleviate is not as desirable from the standpoint of a documented reference.

Publication of appropriate research material must be continued based on this survey. This conforms to perhaps the basic reason the Federation was formed in 1928, the editorial policies followed from then to the present, and the stated feelings of the Publications Committee and the Board of Control.

There is no strong indication from the survey relative to choosing between continuing the quarterly supplement format and devoting an equivalent number of regular Journal pages to research material. A separate publication for subscription by those particularly interested was not shown by the survey as an appealing and responsive alternative.

The respondents represent a viable cross section of Federation membership and the numbers of responses in the various job categories conform generally to what might have been logically expected beforehand. The top four categories of respondents and their replies - consulting engineers; federal, state, and local engineers/chemists; education/research personnel; and collection system/treatment plant personnel - are tabulated separately for question No. 8 relative to the best means of publishing appropriate research material. This tabulation is shown in Table 5 and may be compared to the overall tabulation presented in Table 3.

By the published return date of May 18, 1970, only 33 replies had been received from outside the U.S.; 31 from Canada and 2 from Europe.

Value as a Permanent Reference

The preceding sub-section contains some commentary on this point. By publishing the research supplement as a part of the Federation Journal, maximum benefit in establishing a permanent, retrievable reference was obtained.

Separate pagination, using an R preceding the technical, editorial page numbers, was used to clearly differentiate the supplement from the regular Journal. Consecutive page numbering was employed in each volume year.

English language abstracts written in an informative style and complemented with carefully chosen keywords for information retrieval were prepared for each paper published and included in each issue and designed for use

Table 5 - Selected Respondent Job Categories and Their Replies to Question No. 8

Category	Grand Total All Respondents	Total Answers to Question #8	Quart. Suppl.		Added Jour. pgs.		Separate Publ.		Other	
			No.	%	No.	%	No.	%	No.	%
Cons. Engr.	492	474	239	49(50)	148	30(31)	83	17(18)	4	-
Fed., state, local engr./chem.	570	321	182	32(57)	90	16(28)	47	8(15)	2	-
Ed./Res.	241	223	102	42(46)	80	33(36)	35	15(16)	6	-
Operators	315	305	124	40(41)	111	35(36)	66	21(22)	4	-

NOTE: 1. Not all respondents answered the question. The differences between the responses tabulated in Table 5 and the total replies were not tabulated in any further way but are assumed to be in essentially the same proportions relative to publishing research material as shown in Table 3 for question No. 3.

2. Percentages without parentheses are based on grand total of respondents; percentages in parentheses are based on replies to question No. 8 only.

following the Engineers Joint Council system. These abstracts, but not including the keywords, were translated into French, German, Portuguese, and Spanish and also published in each issue. This scheme followed that of a pattern established in the Journal in January 1966.

Indexing was accomplished with regular Journal indexing in the December Journal issue of each volume year. This was presented in the form of author, subject, and geographical entries based on the keywords previously chosen for each published paper.

These procedures provide the most thorough and useful permanent documented reference of the material published that could be devised.

Self-Support

Other means of financial support in addition to federal assistance were investigated. These included advertising; dues; increased subscription prices; special assessments from research-oriented individuals, organizations, or enterprises; reprints; and page charges.

1. Advertising already has been discussed.

2. Dues are a critical item for the Federation membership.

Analyzing the membership produces some interesting results. If it was assumed that there would be no change in the dues to Active Members prevailing prior to 1970, the growth of that class of membership alone during the 3-year period of the grant would produce funds which would more than pay for the supplement the following year and, with continued growth, could bear the cost in the future. This may be over-emphasis because of rising costs and other needs for funds, but is pointed out to demonstrate that membership growth is a factor of real budgetary significance.

3. Increasing subscription prices is another way to apply leverage toward membership and is a fairly common practice. Subscribers who are eligible thus are encouraged to become members. However, in the Federation most subscribers are libraries, companies, or foreign individuals or organizations who do not now fit the membership structure. Funds from reasonable increases in this area would not solely support publication of the supplement.

4. Special assessments have been used by some organizations. This possibility was aimed at investigating the potential for some kind of special support from research-oriented agencies and individuals. No practical way has been found yet of developing this idea in a way that would be palatable to those concerned.

5. Additional revenues from reprints is based on the possibility of getting into the reprint-selling business. A sizable number of reprints are sold each year but most of these go to the authors who are invited

to order reprints at the time the paper is printed. An expansion of the reprint operation would be to order selected reprints and advertise and sell them. Selection, storage, administrative load, and demand uncertainties precluded seeking solid experience with this option.

6. Page charges are a practice that has grown in the scientific publishing field in recent years. In its use the author pays a fixed amount per page for a paper published. It has developed because publication costs have risen faster than organization revenues. It is strictly a revenue producing technique but has disadvantages. For example, the idea that an author pays to have papers published tends to give the author a feeling of leverage. It is easy to see how much more complex and sensitive it would be to deal with many authors. Another problem is collecting the fees. The system is necessarily operated essentially on an honor system and payment never is 100 percent. Again there is the danger of forming opinions which could influence the acceptability of manuscripts. If so the integrity of technical content could be jeopardized. The American Chemical Society uses page charges and attempts to shelter the editorial staff from all knowledge of who pays. The Federation's operation is too small to maintain such segregation of knowledge.

A recent survey of 362 journals showed that 76 levied page charges and 17 others charged for excess pages. The charges ranged from $6 to $60 per page and collections ranged from about 50 to 80 percent. A further discovery of concern is the fact that the trend in collections is down. Some organizations such as the American Physical Society depend on about 70 percent of the cost of publication from page charges.

The following data show about how much revenue page charges would generate to the Federation by assuming the choices of charges and by assuming page charges would be restricted to the research supplement. It would not appear practical to consider charging authors for pages in the regular Journal, especially since some of the material such as from operators is difficult to obtain; assessing charges essentially would eliminate operating material.

Assume 510 editorial pages in 1968 supplement
Assume 75 percent collection
@ $25 per page ---- $ 9,500
@ $50 per page ---- $19,000

7. The remaining major alternate investigated was the possibility of obtaining further assistance from the federal government through a grant extension or a new grant. Discussions in April 1970 indicated a lack of optimism toward such funding for the following reasons:

(a) the supplement was viewed as an experimental effort to determine the feasibility of such a publication developing its own self-sustaining support as an effective and economical means of disseminating research information to the field;

(b) the EPA-WQO (then FWPCA) plan of publishing research reports through the U.S. Government Printing Office; and

(c) the reduction in federal research grant funds for fiscal 1971.

Budget

Table 6 presents a summary budget for the three-year grant period contrasting original estimates vs. actual experience.

Table 6. - Project Budget Summary

Budget Category	Year*					
	First Expense		Second Expense		Third Expense	
	Est.	Act.	Est.	Act.	Est.	Act.
Salaries and Wages	$31,760	$14,188	$33,300	$15,045	$34,700	$21,085
Supplies	500	500	600	700	700	700
Publication Costs	36,000	38,517	43,200	40,996	51,800	45,314
Rent	3,520	3,520	3,520	3,520	3,520	3,520
Other**	7,440	1,238	2,950	501	3,200	579
TOTALS	$79,220	$57,963	$83,570	$60,763	$93,920	$71,198
WPCF	$ 5,796		$24,305		$53,405	
Federal	$52,167		$36,458		$17,793	

* First - June 1, 1967 - August 31, 1968; 90% federal participation.
Second - September 1, 1968 - August 31, 1969; 60% federal participation.
Third - September 1, 1969 - August 31, 1970; 25% federal participation.

**Includes translations, communications, travel, and advertising promotions.

SECTION VII

ACKNOWLEDGMENTS

The Water Pollution Control Federation expresses its appreciation to the Environmental Protection Agency - Water Quality Office and its predecessor agencies who administered the grant for supporting in part the work described in this report. Particular acknowledgment is made of the cooperation and encouragement given by former Commissioner David D. Dominick; Assistant Commissioner Dr. David G. Stephan, and the Project Officer, Dr. Roger Don Shull.

The Federation staff responsibilities were carried from the beginning of the project in 1967 until July 1969 by Dr. Ralph E. Fuhrman, Executive Secretary and principal investigator; Robert A. Canham, Assistant Secretary and Editor; and Bob G. Rogers, Manager of Publications. In July 1969 Mr. Canham became the principal investigator and in October 1969 he became Executive Secretary. In January 1970 Mr. Rogers became Editor. Mr. Robert H. Dark, Office Manager, served throughout the project.

The project was supported in part by Research Grant WP-01125-01 originating in the Federal Water Pollution Control Administration, U.S. Department of the Interior. The Project Number was 16090 DQZ.

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SECTION VIII

LIST OF PUBLICATIONS

The following publications were produced during the conduct of this project:

Journal Water Pollution Control Federation

Research Supplement	Vol. 39, Part 2, October 1967
	Vol. 40, Part 2, February 1968
	Part 2, May 1968
	Part 2, August 1968
	Part 2, November 1968
	Vol. 41, Part 2, February 1969
	Part 2, May 1969
	Part 2, August 1969
	Part 2, November 1969
	Vol. 42, Part 2, February 1970
	Part 2, May, 1970
	Part 2, August 1970

Editor: Vols. 39, 40, 41	Robert A. Canham
Vol. 42	Bob G. Rogers

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SECTION IX
APPENDIX

READER SURVEY

JOURNAL WATER POLLUTION CONTROL FEDERATION — RESEARCH SUPPLEMENT

TO: WPCF MEMBERS AND SUBSCRIBERS:

As a Federation member or subscriber you have, since October 1967, been receiving the Research Supplement quarterly along with the regular WPCF Journal. This supplement is supported in part by a research grant from the Federal Water Pollution Control Administration; this grant expires in August 1970.

This questionnaire is designed to solicit your opinion of the Federation's role in publishing research material and of the best way to fulfill that role. The information obtained and its analysis will assist in determining future effective and efficient means of membership services.

We urge you to complete the form, answering all questions, and returning it to us by May 18 using the prepaid postage provided. Simply fold the sheet permitting the return address to show, staple the edge, and mail.

Thank you for your cooperation.

ROBERT A. CANHAM
Executive Secretary

TEAR OFF ALONG THIS LINE

1—What is your primary job function? (Check one):

- ☐ Consulting engineer
- ☐ Federal, state, local engineer, or chemist
- ☐ Public health engineer
- ☐ Elected public official
- ☐ Equipment manufacturing personnel
- ☐ Industrial waste engineer or chemist
- ☐ Education or research personnel
- ☐ Wastewater collection/treatment manager, operator, or chemist
- ☐ Other, Specify _____

2—How long have you been a WPCF member or subscriber? (Check one):

☐ Less than 2 yr ☐ 2-5 yr. ☐ 5-10 yr. ☐ Over 10 yr

3—Should WPCF have as a goal the publication of appropriate research material for the water pollution control field? ☐ Yes ☐ No

4—Does the Research Supplement help fulfill the objectives cited on Question 3? (Check one):

- ☐ Very significantly
- ☐ To a degree
- ☐ Not at all

5—Of the approximately 8 papers published in each Research Supplement, how many do you read? (Check one):

☐ None ☐ 1-2 ☐ 3-5 ☐ 6-8 ☐ All

6—Have you used the Research Supplement as a reference? ☐ Yes ☐ No

7—The WPCF should publish ☐ more, ☐ less, ☐ about the same amount of research material as it has in 1968 and 1969 in the Journal and quarterly Supplement.

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8—If your answer to Question 7 is more or about the same, what is the best means of publication? (Check one):

- ☐ Quarterly Research Supplement to Journal
- ☐ Added pages to regular Journal
- ☐ Separate research publication offered for subscription by those most interested
- ☐ Other. Specify _____

9—Would you subscribe to a separate research publication of the size and frequency of the present Supplement and at a cost over and above regular WPCF dues? ☐ Yes ☐ No

10—Other comments (include any comment you wish to make about WPCF publications or other services).

11—Complete this item only if you wish.

_____ Signature

_____ Member Association

Fold, then staple or tape, and return using the prepaid postage provided. Thank you for your cooperation.

Water Pollution Control Federation, 3900 Wisconsin Avenue, Washington, D. C. 20016

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